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Supporting Information for

On the onset of ionospheric precursors 40 min before strong earthquakes

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Introduction

In Figure 4 we have reported the Superposed Epoch Analysis for GEONET GPS station 0035 in Japan and satellite 015. The supporting information includes additional examples of Superimposed Epoch Analysis of STEC curves using other GPS stations and satellites.

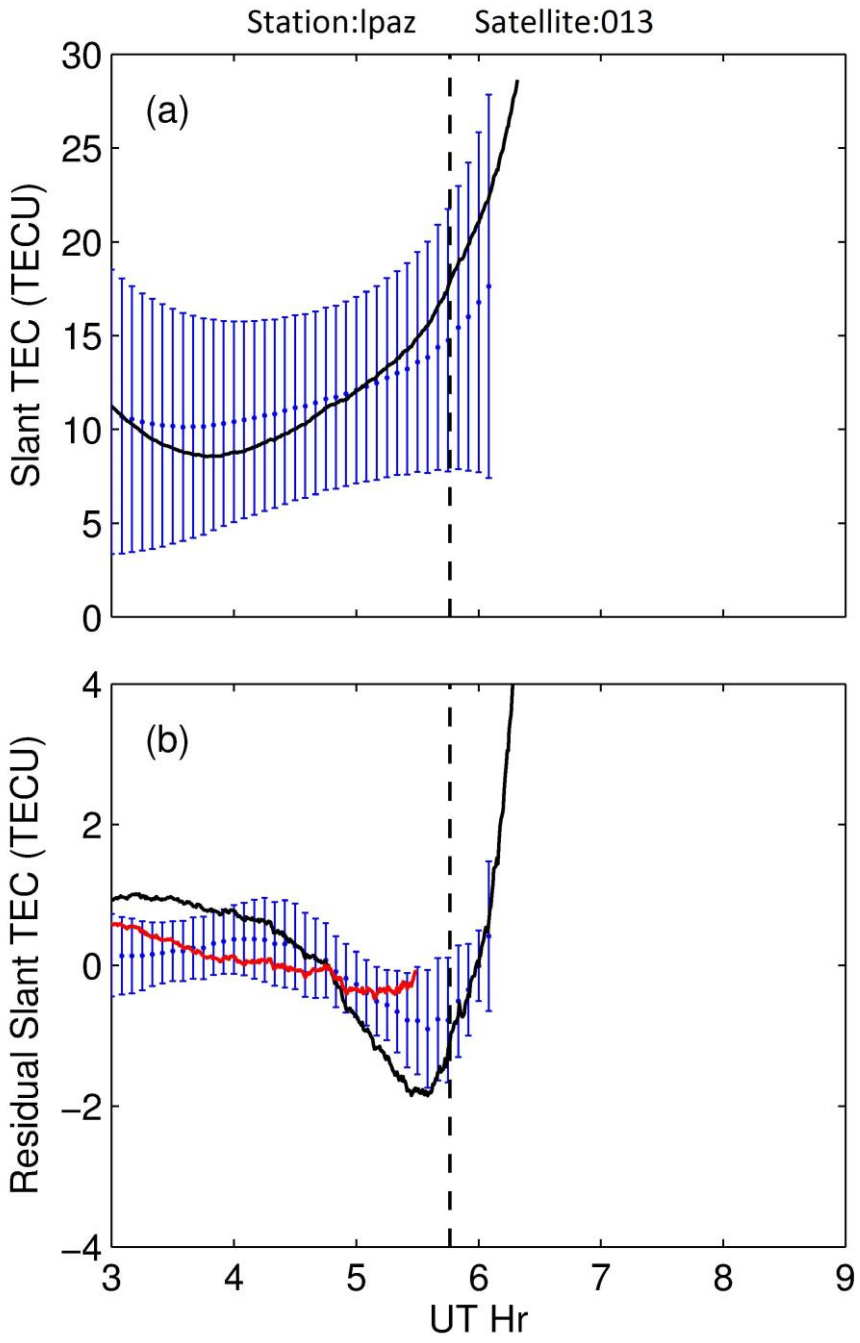

Figure S1. Superposed Epoch Analysis for GPS station lpaz in Mexico and satellite 013. The time of the earthquake (5:46 UT) on 11 March is shown as the black vertical dashed line. (a) The black line is the day of the earthquake slant TEC, and the blue dots represent the mean of 61 curves from ± 30 days of the earthquake. The blue error bars are ± 1 standard deviation from the mean. (b) The black line is the day of the earthquake residual slant TEC, and the blue dots represent the mean of 61 residual curves from ± 30 days of the earthquake. The blue error bars are ± 1 standard deviation from the mean residual. The red curve is the residual slant TEC from the earthquake day including only data prior to the earthquake time in the cubic fit.

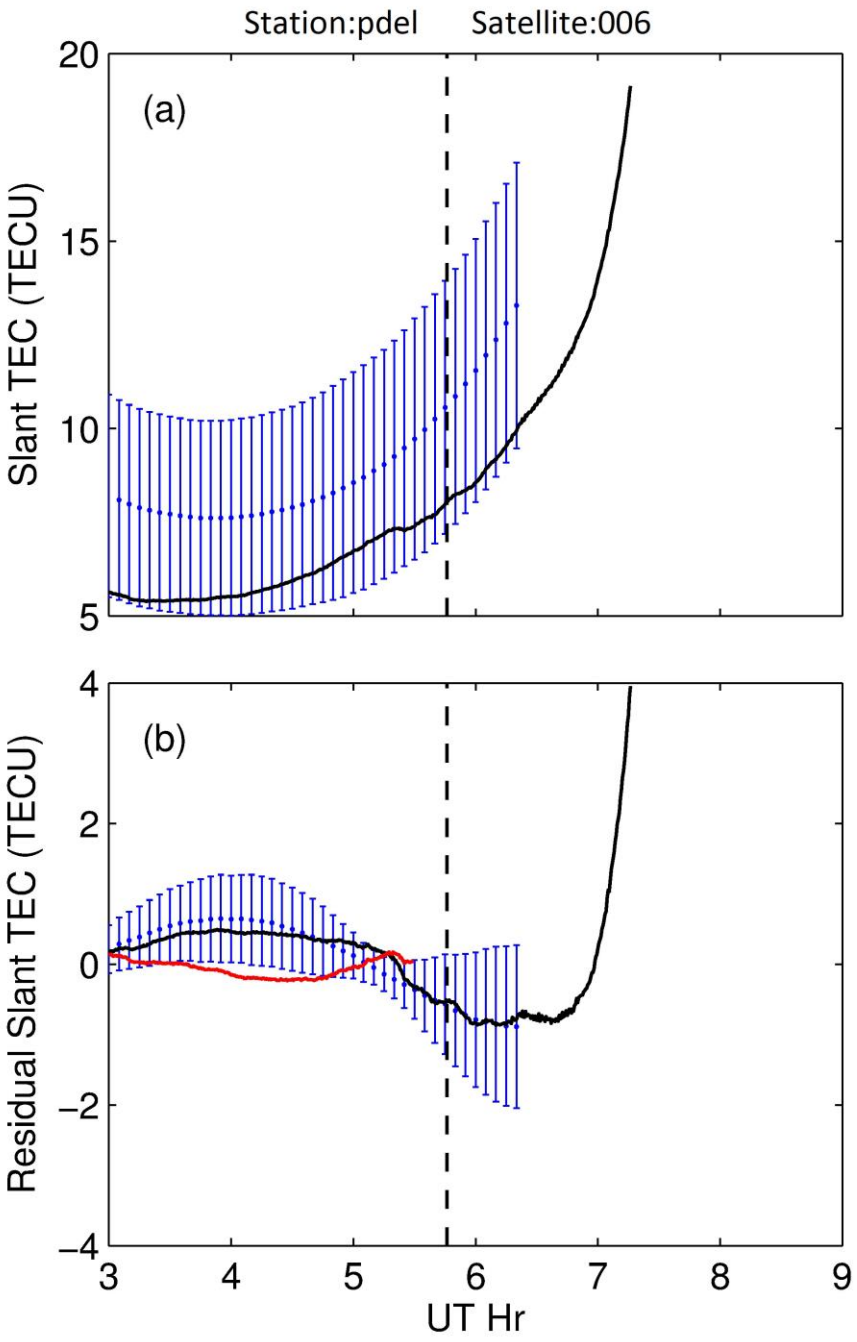

Figure S2. As Figure S1 for GPS station pdel in Portugal and satellite 006.

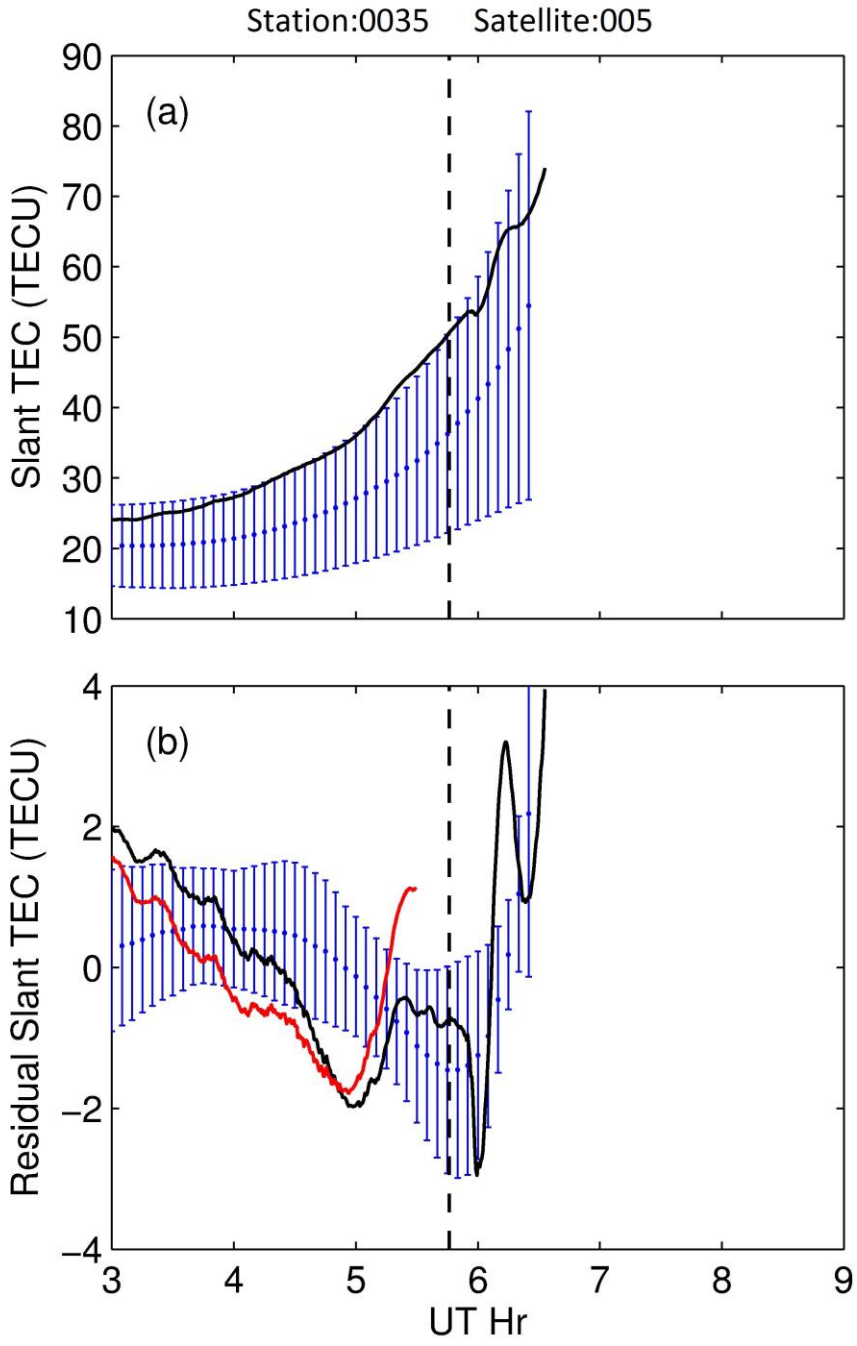

Figure S3. As Figure S1 for GEONET GPS station 0035 in Japan and satellite 005.

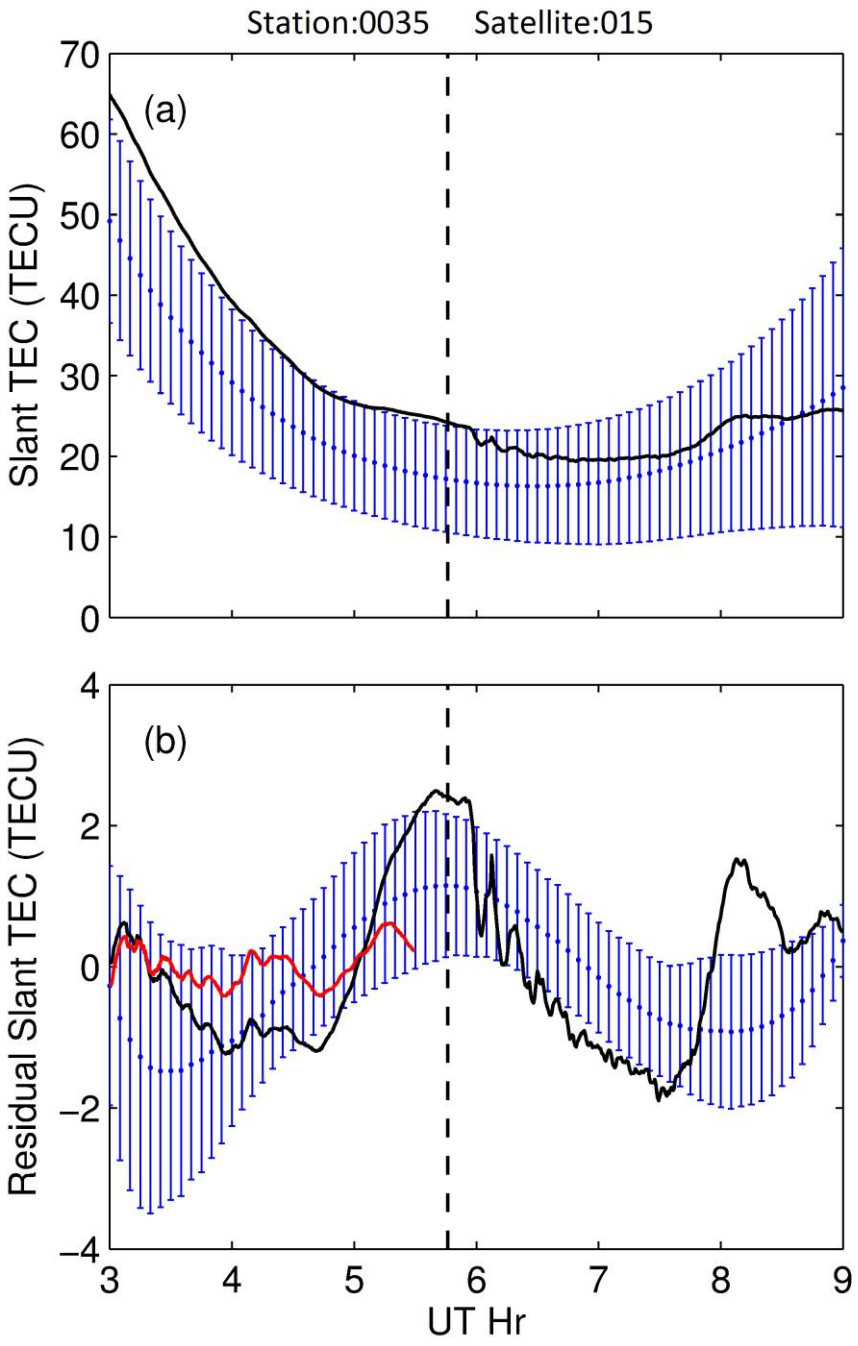

Figure S4. As Figure S1 for GEONET GPS station 0035 in Japan and satellite 015.

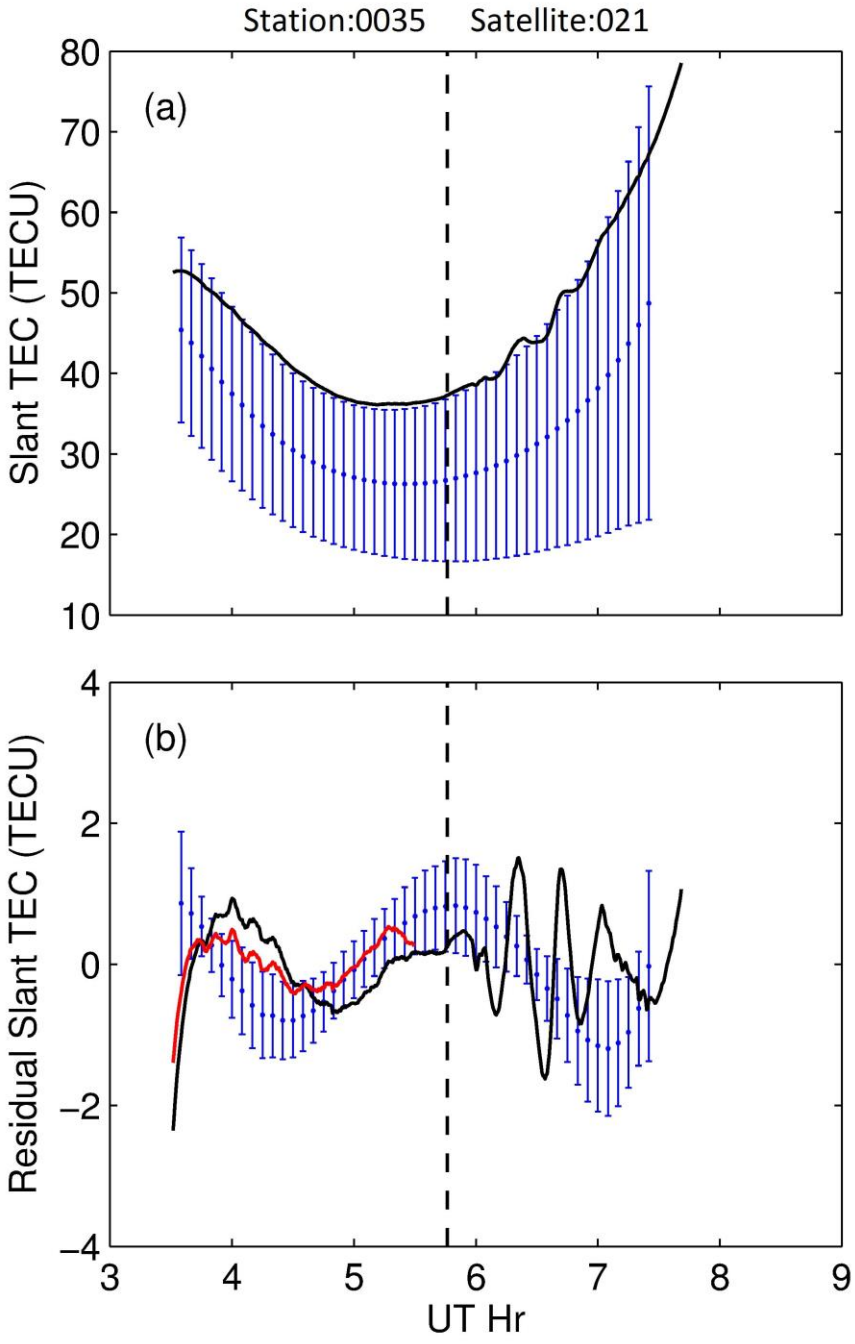

Figure S5. As Figure S1 for GEONET GPS station 0035 in Japan and satellite 021.

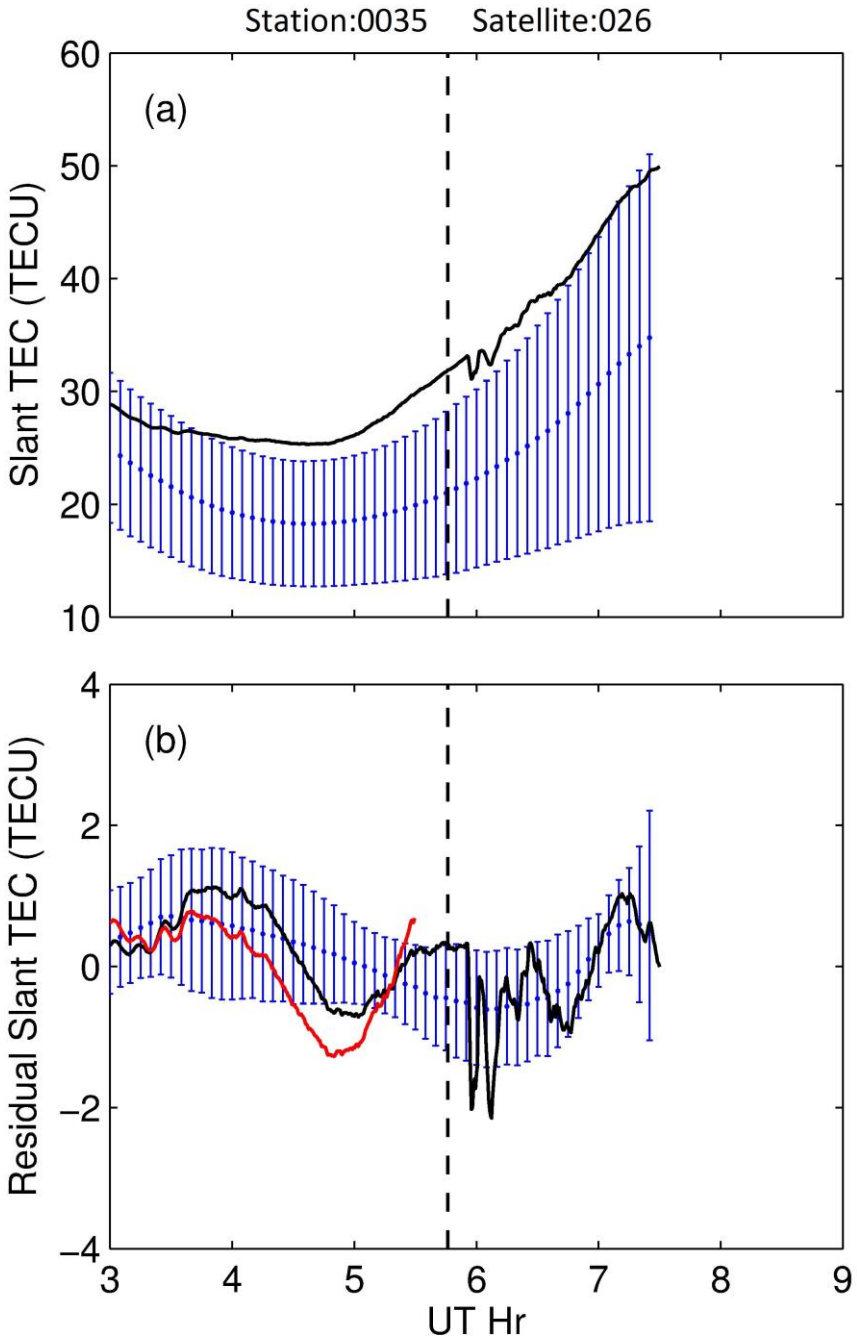

Figure S6. As Figure S1 for GEONET GPS station 0035 in Japan and satellite 026.